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CENTRAL INTELLIGENCE AGENCY

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1. Location:

a. The plant was on the SE outskirts of the town of Tbilisi about 7 km from the center of town. The plant was wagon-shaped and extended about 1.2 km from NW to SE. It is bordered on the northwest by the suburban colony of Tbilisi, on the northeast and southeast by the single-track railroad Tbilisi-Yerevan, and on the southeast by the Kura River.

b. Particularly conspicuous were the two 60-meter radio transmitting towers ("the characteristic sign of Tbilisi"). They were braced iron structures about 300 meters to the north of the main entrance on the northwest side of the plant. Other conspicuous objects were the open-air transformer station, about 1 km southwest of the premises of the plant, and the 40-meter-high black sheet iron smokestack of the heating installation on the premises of the plant. The premises were entirely

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closed in, the front by the main entrance and the eastside (half of it) by a concrete wall, 2 meters high; the remainder was surrounded by a wooden fence.

c. There was another exit on the southside of the premises. This road led to the workmens' settlements, the py camp No 7236/1, and reached as far as the plant airfield.

From the main entrance an asphalt road, about 15 meters wide, followed a northeasterly direction. Greens and workshops were on both sides of this road. From this main road side streets branched off at right angles, interconnected to the main road by parallel streets. Some of the plant buildings were raw brickwork (unplastered). Some were painted a light color while others, ferro-concrete structures, were unplastered. All had flat roofs.

d. The area at the main entrance with the greens and two statues of Stalin and Lenin, the main workshops and office buildings as well as the main road, gave a neat impression both inside and outside. In contrast, the premises of the plant located farther behind were desolate and neglected. As everywhere in USSR, and quite typical of Tbilisi, there was a clean, modern building at the front and behind it semi-finished dirty buildings. No new buildings were under construction during the period of observation.

2. Layout (see annex 1)

The following sections were more or less known in detail:

a. Pressing shop (see annex 2 and (18) of annex 1). In the pressing shop new foundations were dug in November 1946 for a large hydraulic press, the machine parts for which were not yet available. The workshop was made of pressed stones with grey plastering.

(1) Machines: about 20 screw presses (large and small types), hydraulic presses, ranging from 2 to 5 tons, including the new one to be installed; drawing presses, train of rolls, draw benches for making profiles; the dies were manufactured in the melting shop (see 36 of annex 1).

b. Block of workshops (13 of annex 1 and annexes 3 and 4). In February 1947 [redacted] dug the foundations for the annealing and refining plant (13c) and the west wing of (13c)* and, on this occasion, [redacted] the ground plan. It was a single-story building with skylights. Two baths, four turntables, and one special car for the refined parts were available. 25X1 25X1

(1) In (13a) and (13b), fuselages, airfoils, and empennages were made, and preassembling and final assembly work was done

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by means of an assembly line similar to the old German conveyor system (not as with Heinkel, Messerschmidt etc. in a close conveyor band). There were 25 to 30 fuselages on the belt for fuselage assembly.

(2) In the east wing of (13b) was the painting shop and the paint spraying shop for the finally assembled machines.

c. Shop (17 of Annex 1)

A rectangular ferro-concrete building with a flat concrete roof and watchtower for the fire department.

On the ground floor, locksmith's shop and electric shops.

2nd story: Operations office;

3rd story: Design office, drawing of installations, bracing office, etc.

d. Two large storehouses (26 of Annex 1).

For the storage of all kinds of raw material. Sheets, engines, instruments and accessories, etc., were also stored there.

e. Long-distance heating plant (27 of Annex 1)

A ferro-concrete structure, 50x30x20 meters, four large boiler plants with automatic stoker. (28 of Annex 1): 1 sheet iron smokestack, 40 meters high, painted black, on stone base.

f. Molting shop (no foundry)

(36) of Annex 1) for scrapping light metal refuse and manufacture for the pressing shop.

g. Transformer house, a stone building (39 of Annex 1).

h. Two large oil or "magut" containers, 8 to 10 meters long, 3 meters in diameter.

i. There were no air raid protection installations.

3. Labor:

a. Names and exact strength of principal employees and workmen were not known [] estimated labor strength at between 2,500 and 3,000 people []

(1) [] the number of persons leaving the plant after work. (The PWs were often kept waiting for one hour at the exit of the plant until all working teams had arrived)

(2) [] [] in German aircraft plants, the number of workmen required for a monthly output of from 150 to 200 planes (according to Soviet statements).

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b. Fifty percent of the labor force was women and 10 percent convicts, who were quartered in the former PW camp on the premises of the plant.

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great part of the other workmen had been compulsorily hired from Armenia, Ukraine and the eastern part of Russia and led a miserable life. In contrast, skilled workmen and especially specialists (engine fitters and electricians) were well paid (1,000 to 1,500 rubles).

c. PWs were not employed in aircraft manufacture. The occupants of the camp, 150 to 200 in number who formed the permanent "aircraft plant" team, worked in the saw mill, stone factory, locksmith's shop, garage, store buildings and the long-distance heating plant and were detailed for cleaning, digging, bricklaying and loading and discharging railroad cars.

4. Power Supply

a. All installations, except the heating plant, were powered by individual electric motors.

b. Power was supplied via an open air transformer which was about 1 km southwest of the plant. Voltage unknown. This transformer plant was fed by a 90,000 V line (concrete masts) running parallel to the pass road of Yerevan and the power station of Tbilisi. The power station of Tbilisi entirely failed regularly in the summer when there was a shortage of water. Damage from gales was also felt by the mains from Tbilisi. On the other hand, the cross-country mains from Yerevan never failed to supply current so that the plant was supplied without interruption even when the entire town of Tbilisi had no current.

5. Work in plant and evaluation of same:

a. After April 1948, a jet fighter was produced.** According to Soviet workmen the monthly output was 150 to 200 planes. Before that date, from early 1947 to March 1948, the same plane was built as a single-seater.

b. The work time was 8 hours - from 9 a.m. to 6 p.m. - for both civilians and PWs. During the night only certain sections continued with extra priority work caused by alterations or test flying operations.

c. Piece parts were manufactured in shops (11) and (12). Certain parts of high value such as engines, turbines, toothed wheels, etc., as well as instruments, were delivered by rail and stored in the two storehouses (2a). Up to early 1948, only Junkers turbines, arriving in special boxes, were built in.

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d. only foreign sheet metal was used: German material from VDT (United Light Metal Works, Hannover and Bonn), Vdm (Heddernheimer Copper Works, Frankfurt), and British and American metal sheets (marked "Alclad").

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e. There was a lot of refuse of coverings and light metal pressure disks (airfoil ribs and similar parts), resulting in the collection and remelting of piles of refuse each month in the nearby melting shop. [] this was quite an unknown sight in Germany. [] several conclusions from this great amount of refuse: i.e., the Soviets were not yet quite familiar with forming duraluminum, Lantal, aluminum, electron etc. and there was still much experimenting on presses (due to splitting of the sheets, inaccurate radii, insufficient allowance of the sheets). Early 1948, modern annealing and refining baths as well as oxidizing and cadmium plating methods were still lacking. The manufacture of light metal alloys was also supposed to be far behind.

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f. On the whole, [] the good workmanship in spite of the high percentage of women and general hands. The countersunk rivetings on the airfoils, the empennages, and the fuselages, for instance, had been done very carefully and the same was the case with the treatment and forming of metal sheets. As a result, they were quite smooth after being painted or varnished without previous priming. The quality inspectors set extremely high standards for testing the components as well as the acceptance of assembled units. This accounts for low figures of breakdowns and the fact that no crash occurred during the period of observation.

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g. Armament, radio equipment, and other accessories were installed during the assembly operations in shop (13).

h. [] only two or three planes were taken from the weekly production for adjusting and flight testing on the plant airfield about 6 km away. These planes were afterwards again taken apart like the others, packed in special boxes and dispatched on trains of 30 freight cars (one plane box per railroad car) in the direction of Baku, destination unidentified.

[] comment:

This report [] gives information on the layout and working method in the aircraft plant in Tbilisi. This time [] only some of the finished planes were undergoing test flights, whereas most of the planes were taken to the loading ramp directly from the conveyor and were packed there in their transport boxes.

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This report is particularly valuable as it gives a description of the internal organization and working method in the plant, which will probably apply also to other plants. The conveyor system for series production, called old or out of date in this report, has been retained in many aircraft firms, e.g. by Heinkel and Junkers at the end of the war in Germany, as it insures a better supervision of the working.

- 4 annexes: (1) Aircraft plant No 31 in Tbilisi
(2) Aircraft Plant No 31 in Tbilisi (Detailed sketch)
(3) (Detailed sketch of building of Building 18
13c of annex 1) or annex 1)
(4) (Detailed sketch of building
13a of annex 1)

[] Comment: 13c not shown as such in Annex 1. It may possibly be item 12 of 13a as shown in Annex 4.

[] Comment: Lantal is the trade name of an aluminum alloy used as aircraft skin which is manufactured in the Soviet Zone of Germany.

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1. Main entrance
2. Porter's house
3. Garage, passenger cars
4. Main road
5. Stalin and Lenin Monuments
6. Water basin
7. Wooden cantonment building, one story
8. Stone building, three-story
9. Stone building, three-story
10. Workshop, one-story
11. Workshop buildings,

a ₁	3 stories	} Manufacture of piece parts
a ₂	4 stories	
b ₁	2 stories with skylight	
12. Workshop buildings,

a ₁	3 stories
a ₂	4 stories
b ₁	1 story with skylight 2nd story: management's office etc. <i>see sketch</i> 3rd story: Design office.
13. Workshop buildings,

a ₁	3 stories	Minal assembly, see sketch Refining baths
a ₂	3 stories	
b&c	1 story with skylight	
14. Carbide depot and acetylene production
15. Wooden cantonment buildings (offices)
16. Wooden building and cantonment buildings (locksmith's shop for repairs and installation)
17. Workshop (ferro-concrete building), 4 stories,
Ground floor: locksmith's and electrical shops
1st story: Operations office room
2nd story: Design office, installation building, tracing office, etc.

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Square building with flat concrete roof and watchtower (fire lookout by day and by night).

18. Pressing shop
19. Workshop, 1 story
20. Large stores (storage of all kind of raw material, instruments, engines and accessories)
21. Two-story, wooden building with ventilation flaps for storage of plywood
22. Two-story stone building (carpenter's shop, making the large special boxes for the shipment of the finished planes on railroad cars)
23. Two-story stone building (test room for instruments and gear, and breaking test and other test machines)
24. Cantonment building (storage of building material)
25. Loading ramp
26. Loading ramp (disassembly and storage into special boxes of finished planes)
27. Long-distance heating plant (ferro-concrete building - 50 x 30 meters. 20 meters high, four large boiler sets with automatic stoking)
28. Smokestack (of sheet iron, painted black, on lower stone base, about 40 meters high)
29. Coal dumps
30. Railroad tracks
31. Wooden cantonment buildings
32. Stone building, 2 stories
33. Wooden building (storage of concrete)
34. Stone factory (wooden and stone building, two stories)
35. Wooden cantonment buildings (storage of paints and unmelted light metal ingots)
36. Melting shop (two-story stone building) for scrapping light metal refuse
37. Flat, two-story stone building (locksmith's shop)
38. Two-story stone building (storage of paints and oils)
39. Transformer house (stone building)

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40. Porter's house (wooden cantonment building)
41. South exit (road to plant-owned airfield)
42. Sawmill (vertical and horizontal saw frames)
43. Circular saw
44. Sawmill manager's office
45. Wooden shed for storing and drying sawn timber
46. Storage of trunks (chiefly from Rumania)
47. Two large oil or "magut" containers, diameter 3 meters and 8 to 10 meters long.
48. Pipe line for draining tank cars standing on top of the slope
49. Passenger car and truck garage (two-story stone building)
50. Automobile repair shop (two-story, stone building)
51. Wooden cantonment building (workshop)
52. Stone wall (concrete 3 meters high)
53. Wooden fence
54. Watchtowers (of wood)
55. Railroad tracks, property of plant
56. Railroad bridge across the Kura River to Yerevan is an iron structure.
57. Kura River.

Legend to Annex 2:

Detailed sketch of building (18) of Annex 1

1. Work benches
2. Drawing and stretching machine
3. Screw presses of various sizes
4. Drawing benches
5. Stretching machines
6. Pressure part and sheet depot

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7. Foundation for large hydraulic press

8. Offices

9. Annex, two-story.

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